Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method in a data processing system for providing hardware assistance to prefetch data during execution of code by a processor in the data processing system, the method comprising:

responsive to loading of an instruction in the code into a cache, determining, by a processor unit, whether metadata for a prefetch is present for the instruction, wherein the metadata comprises a prefetch indicator that is associated with the instruction and stored in a prefetch indicator field of a page table ~~by one of being placed in the instruction and stored in a shadow memory~~;

storing a first threshold value and a second threshold value in a first threshold field and a second threshold field, respectively, of the page table in association with the prefetch field and a plurality of counter fields, wherein the first threshold value specifies a maximum counter value in an associated counter field and wherein the second threshold value specifies a minimum counter value in an associated counter field;

responsive to a determination of the metadata being present for the instruction, determining whether data is to be prefetched, wherein the step of determining whether data is to be prefetched comprises [[one of]] determining whether a first counter value in an associated counter field representing a number of outstanding cache misses is less than [[a]] the first threshold value in the first threshold field, and determining whether a second counter value in an associated counter field representing a number of cache lines chosen to be replaced is greater than [[a]] the second threshold value in the second threshold field; and

responsive to a determination that data is to be prefetched, prefetching data, from within a data structure using the metadata, into the cache in the processor, wherein the step of prefetching comprises [[one of]] prefetching the data responsive to determining that the first counter value in an associated counter field representing the number of outstanding cache misses is less than the first threshold value in the first threshold field, and ~~prefetching the data~~ responsive to a determination ~~determining~~ that the second counter value in an associated counter field representing the number of cache lines chosen to be replaced is greater than the second threshold value in the second threshold field.

2.-3. (Canceled)

4. (Previously Presented) The method of claim 1, wherein the prefetching step includes: retrieving the data from within the data structure using a pointer and an offset value.

5. (Previously Presented) The method of claim 1, wherein the prefetching step includes: retrieving the data from the data structure using an address.

6. (Previously Presented) The method of claim 1, wherein the processor unit is selected from one of an instruction cache and a load/store unit.

7. (Original) The method of claim 1, wherein the cache is an instruction cache.

8. (Original) The method of claim 4, wherein the metadata includes the pointer and the offset value.

9.-23. (Canceled)

24. (Currently Amended) A method in a data processing system for providing hardware assistance to prefetch data during execution of code by a processor in the data processing system, the method comprising:

responsive to loading of an instruction in the code into an instruction cache, determining, by a processor unit, whether metadata for a prefetch is present for the instruction, wherein the processor unit comprises one of the instruction cache and a load/store unit, and wherein the metadata comprises a prefetch indicator associated with the instruction and stored in a prefetch indicator field of a page table ~~by one of being placed in the instruction and stored in a shadow memory~~, and comprises a pointer and an offset value;

storing a first threshold value and a second threshold value in a first threshold field and a second threshold field, respectively, of the page table in association with the prefetch field and a plurality of counter fields, wherein the first threshold value specifies a maximum counter value in an associated counter field and wherein the second threshold value specifies a minimum value in an associated counter field;

responsive to a determination of the metadata being present for the instruction, determining whether data is to be prefetched, wherein the step of determining whether data is to be prefetched comprises [[one of]] determining whether a first counter value in an associated counter field representing a number of outstanding cache misses is less than [[a]] the first threshold value in the first threshold field,

and determining whether a second counter value in an associated counter field representing a number of cache lines chosen to be replaced is greater than [[a]] the second threshold value in the second threshold field; and

responsive to a determination that data is to be prefetched, prefetching data, from within a data structure into the instruction cache in the processor using the pointer and the offset value, wherein the step of prefetching comprises [[one of:]] prefetching the data responsive to determining that the first counter value in an associated counter field representing the number of outstanding cache misses is less than the first threshold value in the first threshold field, and ~~prefetching the data~~ responsive to a determination ~~determining~~ that the second counter value in an associated counter field representing the number of cache lines chosen to be replaced is greater than the second threshold value in the second threshold field.